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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/534,771	05/13/2005	Jorg Walbracht	112740-1073	1778

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EXAMINER

HU, RUI MENG

ART UNIT	PAPER NUMBER
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2618

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/23/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/534,771

Applicant(s)

WALBRACHT, JORG

Examiner

RuiMeng Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21,23,24 and 30-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21,23,24 and 31-35 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

2. **Claims 21, 23 and 31-35** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Nojima et al. (US Patent 4772856)** in view of **Dent (US Patent 6889034)**.

Consider **claim 21**, Nojima et al. clearly disclose an apparatus for optimizing the efficiency of an amplifier arrangement comprising (Abstract, figures 4 and 5, column 4 line 45-column 5 line 8, column 5 line 66-column 6 line 2): a non-linear power amplifier (figure 5, amplifier 34) in a mobile radio device (column 1 lines 5-7, column 8 lines 58-60); and a plurality of push-pull phase modifiers coupled to said amplifier (figure 5, phase shifters 44 and 52 having phase inversion capability, push-pull phase shifting), wherein said phase modifiers generate a signal offset in phase (phase inverting) from an input signal and wherein the outputs of the phase modifiers are coupled to a passive component (figure 5, combiner 47).

However, Nojima et al. fail to disclose wherein a symmetrical transformer included in the amplifier arrangement is used as the passive component, and wherein

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a voltage is decoupled in the symmetrical transformer that is rectified in a rectifier, and wherein the direct current output by the rectifier is fed to a supply unit as charge current.

In the same field of endeavor, Dent clearly discloses wherein a symmetrical transformer included in the amplifier arrangement is used as the passive component, and wherein a voltage is decoupled in the symmetrical transformer that is rectified in a rectifier, and wherein the direct current output by the rectifier is fed to a supply unit as charge current (figure 2, column 4 lines 7-44, the coupler comprises a transformer as shown in figure 3).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Dent into the art of Nojima et al. as to include the waste energy recovery system for improving efficiency.

Consider **claim 23 as applied to claim 21**, Nojima et al. as modified by Dent clearly disclose wherein power is obtained at the passive component after the phase modifiers (Dent clearly discloses the dissipated power output from the coupler 220 being fed to the rectifier 222 as improving efficiency (figure 2)).

Consider **claim 31 as applied to claim 21**, Nojima et al. as modified by Dent clearly disclose wherein the input impedance of the rectifier is amplitude-independent (Dent clearly discloses the dissipated energy input to the rectifier is from the difference $P_{\max} - P(t)$ wherein $P_{\max} - P(t)$ is amplitude-independent (column 4 lines 7-44)).

Consider **claim 32 as applied to claim 21**, Nojima et al. as modified by Dent clearly disclose wherein a single-path or multipath rectifier is used as the rectifier (Dent clearly discloses figure 2, rectifier 222 is a single path rectifier).

Consider **claim 33 as applied to claim 21**, Nojima et al. as modified by Dent clearly disclose wherein a maximum peak power arising in the power amplifier can be transmitted with a deviation of up to 6 dB (Dent clearly discloses column 4 line 33-34, peak to mean ratio of 6 dB).

Consider **claim 34 as applied to claim 21**, Nojima et al. as modified by Dent clearly disclose wherein the transmitted power of the power amplifier is up to 6 dB around the crest factor above the average power required at the output (Dent clearly discloses column 4 line 33-34, peak to mean ratio of 6 dB).

Consider **claim 35 as applied to claim 31**, Nojima et al. as modified by Dent clearly disclose further comprising a supply unit coupled to the power amplifier, wherein the supply unit is one of a battery and an ac adapter (Dent clearly discloses figure 2, column 4 lines 7-44, A waste energy recovery rectifier 222 is used to rectify the dissipated energy and feed the DC current back to the battery, and Vcc is supplied to amplifiers).

3. **Claim 24** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Nojima et al. (US Patent 4772856)** as modified by **Dent (US Patent 6889034)** in view of **Schell et al. (US Patent 6751265)**.

Consider **claim 24 as applied to claim 21**, Nojima et al. as modified by Dent fail to disclose wherein an amplitude modulated signal is generated by the amplifier arrangement by means of fed amplitude information.

Enhanced Data Rate GSM Evolution (EDGE) is well known in the art, an example of EDGE is shown by Schell et al. (figure 2A, Amplitude Modulated Signal (23A) is generated by the amplifier 22 by means of fed amplitude information $A(t)+K$).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the selection techniques taught by Schell et al. into the art of Nojima et al. as modified by Dent as to include an EDGE amplifier arrangement means for increasing data rate.

Allowable Subject Matter

4. **Claim 30** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Consider **claim 30 as applied to claim 21**, the best prior art of record found during the examination of the present application, **Nojima et al. (US Patent 4772856)** as modified by **Dent (US Patent 6889034)** fail to disclose wherein a signal generated by the power amplifier is divided into two part signals of equal size and fed to the plurality phase modifiers.

Nojima et al. as modified by Dent disclose (figure 4) a divider 31 equally divides an input signal from the input terminal 11, and the divider 31 has its two output terminals

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connected to the inputs of first and second amplifying means 32 and 33, respectively. These teachings clearly differ from the claimed invention; therefore, claim 30 of the present application is considered novel and non-obvious over the prior art and, consequently, is allowed.

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed**

to: Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RuiMeng Hu whose telephone number is 571-270-1105. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on 571-272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

RuiMeng Hu

R.H./rh

April 2, 2007

EDAN ORGAD
PRIMARY PATENT EXAMINER

Edan Orgad 4/10/07